

BEFORE THE  
**Federal Communications Commission**

WASHINGTON, D.C. 20554

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Federal Communications Commission  
Office of the Secretary

**ORIGINAL**

In the Matter of )

Advanced Television Systems )  
and Their Impact on the )  
Existing Television )  
Broadcast Service )

MM Docket No. 87-268/  
RM-5811

TO: The Commission

**COMMENTS  
OF THE  
LAND MOBILE COMMUNICATIONS COUNCIL**

John B. Richards  
Chairman  
Drafting Committee

and

Maureen A. O'Connell  
Drafting Committee

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Dated: November 18, 1987

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SUMMARY

The Commission should limit the future development of Advanced Television (ATV) systems to the existing 6 MHz bandwidths which broadcasters currently enjoy. This approach will allow for the development of improved television broadcast signal quality, and will at the same time allow for increased "UHF Sharing" by the Private Land Mobile Radio Services.

LMCC previously filed with the Commission in the UHF Sharing proceeding extensive documentation concerning the projected spectrum requirements of the Private Land Mobile Radio Services. To satisfy those documented needs, the Commission must move forward as soon as possible with its long-standing UHF Sharing proposals, and it must limit the development of ATV systems to 6 MHz bandwidths.

It is clear that 6 MHz ATV systems are feasible. The National Broadcasting Company, Inc.'s recent announcement concerning its 6 MHz "ACTV" system demonstrates that such systems are workable. Other innovative broadcasters also have shown that significant advancements in television signal quality can be made within the current 6 MHz channels.

By requiring broadcasters to develop ATV systems within their existing 6 MHz bandwidths, the Commission will best meet the competing public interest considerations presented in this proceeding and the UHF Sharing proceeding. The 6 MHz "solution" to the ATV "problem" would provide for the development of ATV systems, allow the continued reception of standard NTSC signals on the 140 million or more television receivers currently in existence, and enable the Commission to move forward with its UHF Sharing proposals, all to the general benefit of the American public.

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**COMMENTS  
OF THE  
LAND MOBILE COMMUNICATIONS COUNCIL**

In a Notice of Inquiry ("Notice") adopted on July 16, 1987,<sup>1/</sup> the Federal Communications Commission ("Commission") invited comment on the various public policy and technical issues surrounding the introduction of advanced television ("ATV") technologies by television broadcast licensees. The Land Mobile Communications Council ("LMCC") is pleased to submit these Comments in response to the Commission's invitation.

**I. PRELIMINARY STATEMENT**

1. The Land Mobile Communications Council acts on behalf of the vast majority of public safety, business,

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<sup>1/</sup> 52 Fed. Reg. 34259 (September 10, 1987).

industrial, land transportation and common carrier land mobile radio users, as well as a diversity of land mobile service providers and equipment manufacturers. LMCC represents its membership before the Commission on a variety of communications related issues. A partial list of LMCC's membership includes:

- American Association of State, Highway and Transportation Officials
- American Automobile Association
- American Petroleum Institute
- American SMR Network Association, Inc.
- American Trucking Association, Inc.
- Association of American Railroads
- Associated Public Safety Communications Officers, Inc.
- Cellular Telecommunications Industry Association
- Electronic Industries Association
- Forest Conservation Communications Association
- International Association of Fire Chiefs
- International Association of Fish and Wildlife Agencies
- International Bridge, Tunnel and Turnpike Authority, Inc.
- International Municipal Signal Association
- International Taxicab Association
- Manufacturers Radio Frequency Advisory Committee
- National Association of Business and Educational Radio, Inc.
- National Association of State Foresters
- Special Industrial Radio Service Association, Inc.
- Telocator Network of America
- United States Telephone Association
- Utilities Telecommunications Council

The members of many of these organizations use land mobile radio as a business tool to enhance the provision of services and products to the general public. Others provide commercial service to a wide range of users of land mobile radio. Ensuring that the continuing needs of the land mobile radio services are met is thus of vital concern to LMCC.

2. The Commission in this proceeding is inquiring into the rules and policies that should be applied to any new technologies designed to improve the quality of television pictures and sound. The Commission asks for comment on alternative spectrum allocation arrangements for ATV systems, and on the compatibility between the current National Telecommunications System Committee ("NTSC") standard and ATV systems, and among ATV systems.

3. This proceeding was prompted by the filing of a "Petition for Notice of Inquiry" by 58 broadcast organizations, who argued that the Commission should consider the future of ATV prior to allowing further sharing of the UHF broadcast spectrum by the Private Land Mobile Radio Services, as proposed by the Commission in General Docket No. 85-172 (the "UHF Sharing" proceeding). In response to a related

Petition filed by the same broadcast organizations, the Commission recently announced that it was deferring final action in the UHF Sharing proceeding pending the filing of an interim report by the Advisory Committee on Advanced Television Systems.<sup>2/</sup> Thus, the future of ATV will directly impact the future of the UHF Sharing proceeding and the availability of an adequate supply of land mobile spectrum to satisfy projected requirements in the nation's major urban areas. Accordingly, LMCC appreciates this opportunity to submit these Comments.

## II. COMMENTS

4. The Commission must balance the legitimate needs of land mobile and broadcast entities in determining the maximum amount of spectrum which should be consumed by future ATV systems. By requiring ATV systems to operate within their existing 6 MHz television bandwidths, the Commission will promote the development of improved broadcast signal

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<sup>2/</sup> See, FCC Report No. DC-1027, October 15, 1987. LMCC anticipates filing Comments on the Advisory Committee's interim report. Those Comments are expected to address in considerable detail the initial recommendations of the Advisory Committee, which are due in approximately 6 months.

quality, and at the same time will allow for increased UHF Sharing to relieve to some extent the critical and growing need for additional spectrum in the Private Land Mobile Radio Services. LMCC submits that this approach best meets the competing public interest considerations presented in this proceeding.

5. The Commission itself recognized in its Notice of Inquiry that:

Inasmuch as there are both other attractive uses of spectrum in addition to improved television and many different ways of delivering improved television images to viewers, the overarching question we must address in this proceeding is how to provide for the optimum mix of advanced television (in terms of quality and quantity) and other communications uses.<sup>3/</sup>

The Commission also recognized in its Notice that consumers may well be better served by additional land mobile radio service, or by some combination of land mobile and improved television service, rather than by extremely wideband and spectrally wasteful ATV systems.<sup>4/</sup>

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<sup>3/</sup> Notice at ¶ 102.

<sup>4/</sup> Id.

6. In light of the potential for developing ATV systems within the existing 6 MHz broadcast channels, as discussed below, the Commission should consider seriously the needs of the land mobile community for additional spectrum, and should limit the amount of spectrum available for use in connection with ATV. LMCC has previously filed with the Commission extensive documentation of these needs and LMCC refers the Commission to those pleadings for a detailed analysis of the land mobile community's future spectrum requirements.<sup>5/</sup>

7. In short, the frequencies in the Private Land Mobile Radio Services already are or soon will be completely "saturated" with mobile units in the major urban areas of this country. These are the same areas which are candidates for UHF Sharing in General Docket No. 85-172. The cities include Los Angeles, New York, Baltimore/Washington, D.C., Philadelphia, Chicago, San Francisco, Dallas, and Houston. The extensive application and licensing records which LMCC submitted in connection with its Comments in the "UHF

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<sup>5/</sup> See, e.g., Comments and Reply Comments, PR Docket No. 85-172, LMCC and LMCC member associations.

Sharing" proceeding are clear evidence of congestion and overcrowding on these frequencies.

8. As to the future need for spectrum in the Private Land Mobile Radio Services, the demand for mobile radio is expected to grow substantially over the years.<sup>6/</sup> It is likely that most major urban areas will be "out" of spectrum within ten years. In New York, Chicago and Los Angeles, in particular, spectrum will be unavailable by the late 1980's or early 1990's. Even with the new 800 MHz allocation and innovative technological developments to conserve valuable spectrum, the land mobile community will still experience significant shortages both in the public safety and commercial services in the near future.

9. Since the Docket No. 82-10 proceeding, the Commission has consistently recognized that there is a pressing need for spectrum in these services. For example, the Commission in its Memorandum Opinion and Order ("MO&O") in General Docket Nos. 84-1231, 84-1233 and 84-1234 recently recognized that the present and future demand for Private

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<sup>6/</sup> See, Comments of LMCC, PR Docket No. 85-172, p. 44.

Land Mobile Radio Services justified an immediate allocation of additional spectrum in light of projected requirements.<sup>7/</sup>

10. The immediacy of this need must not be overlooked by the Commission in its inquiry into future ATV systems. As Motorola indicated in its Comments in the UHF Sharing proceeding, a minimum of 5 years is needed to develop the equipment to be used for channels shared with UHF-TV. In addition, equipment development cannot begin until the conclusion of Docket No. 85-172 and further proceedings that will be required for the development of technical licensing and standards. LMCC thus urges the Commission to limit the development of ATV to within the current broadcast bandwidth, and to move forward promptly with a decision in the UHF Sharing proceeding.

**A. Any ATV System Adopted Should Use No More Than the Existing 6 MHz Channel Bandwidths**

11. In LMCC's view, the key issue in this proceeding is the amount of spectrum required to deliver to the American

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<sup>7/</sup> FCC 87-302, Released November 9, 1987. In addition, the Commission in its inquiry into trunking in PR Docket No. 87-213 refers to the steady growth in demand for private land mobile frequencies over the last thirty years, and the current congestion on these frequencies. Notice of Inquiry, PR Docket No. 87-213, 52 Fed. Reg. 2565 (July 6, 1987) at ¶ 9.

public a television signal of sufficient quality. LMCC maintains that delivery of such a signal within the existing 6 MHz channel is not only possible, but it is the method of delivery that has the highest probability of success and offers the greatest overall public interest benefits. The 6 MHz "solution" to the ATV "problem" would provide for the development of ATV systems, enable the Commission to move forward with its UHF Sharing proposals, and allow the public to continue to receive standard NTSC signals on the 140 million or so television receivers currently in existence.

12. It is clear that a 6 MHz ATV system is feasible. For example, such a notable organization as the National Broadcasting Company, Inc. (NBC) recently joined with major television receiver manufacturers to develop a workable 6 MHz ATV system. In his written testimony, on October 8, 1987, before the Subcommittee on Telecommunications and Finance of the Committee on Energy and Commerce, United States House of Representatives, Mr. Steven Bonica, Vice President of Engineering for NBC made clear the virtues of NBC's 6 MHz "ACTV" system.<sup>8/</sup>

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<sup>8/</sup> A copy of Mr. Bonica's testimony is attached as Appendix A.

13. According to Mr. Bonica, the benefits of NBC's ACTV system include the capability to deliver a high quality, wide screen picture in a manner that makes good technical and economic sense for broadcasters, cable operators, equipment manufacturers and consumers. Mr. Bonica's states that:

Free, over-the-air television stations will be able to transmit local and network programs with higher definition and resolution without major alterations to their existing engineering schemes. A standard broadcast station will be able to implement the ACTV system gradually, at a lower cost than other systems, and with no disruption of service to its viewers. Station operators will be able to upgrade their facilities and service commensurate with viewer demand. This will allow stations to gauge the pace of their financial investment. Furthermore, stations will be able to deliver enhanced television in an NTSC-compatible single channel without requiring additional spectrum.

14. NBC is not alone in its efforts to develop a 6 MHz solution to ATV. NHK of Japan is developing a 6 MHz system for terrestrial broadcast in addition to the Muse system targeted for Direct Broadcast Satellite. The work of Drs. William F. Schreiber of MIT, Charles Faroudja, and Richard Iredale of the Del Rey Group, and other innovative broadcast entities also shows clearly that significant

advancements in television quality can be made within the current 6 MHz channel.<sup>9/</sup>

15. Moreover, it is apparent that for any ATV system to be successful, it must be practical for broadcasters to implement. ATV systems that would require auxiliary full or half channel bandwidths essentially would require broadcasters to install, maintain, and operate two transmitters. The extra power consumption required to do so is no minor expense. In addition, many broadcasters would be forced to support the added expense of two separate antenna sites.

16. Such requirements would drastically increase the cost of providing broadcast service, with apparently no substantial gain in audience viewership or advertising revenues. In fact, for a VHF broadcast station using UHF spectrum to provide the auxiliary half or full channel, the ATV coverage area may well be smaller than the current

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<sup>9/</sup> See Closed Circuit, Broadcasting, November 9, 1987, at p. 7; True Colors, High Fidelity, March 1987, p. 48; Invention Broadcasts Higher Definition To Existing TVs, Electronic Engineering Times, January 19, 1987, p. 35; Zenith's FTM Could Be Boom for Television, Billboard, September 12, 1987, p. 55; Fitting HDTV Into The Current System; MediaScene, July 1987, p. 20; and NBC's One-Channel Solution To HDTV, Broadcasting, October 5, 1987, p. 35.

coverage area because of differing propagation conditions between the VHF and UHF bands.

17. Lastly, as a practical matter it is far from certain that sufficient UHF spectrum exists to accommodate all existing VHF and UHF stations with an auxiliary half channel. As indicated in LMCC's Comments filed previously in Docket No. 85172, this problem could be particularly exacerbated in the nation's major urban areas.

### III. CONCLUSION

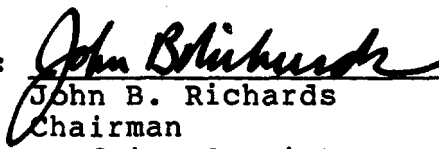
18. LMCC urges the Commission to consider carefully the opportunity costs to the American public of adopting spectrally inefficient ATV approaches. LMCC and others in the land mobile community have shown that additional spectrum for land mobile communications will be required in the near future in the top urban areas. Failure to provide this additional spectrum ultimately will cause decreased operational efficiency in the nation's businesses as well as in state and local jurisdictions serving the American public safety community. Such a result is unwarranted and unnecessary. ATV can be accomplished in 6 MHz.

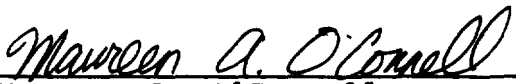
19. The American public deserves the benefits of both ATV technology and increased "UHF Sharing." By requiring future ATV systems to occupy no more than 6 MHz channel bandwidths, the Commission can move forward with its long-standing proposals in the UHF Sharing proceeding and promote the development of ATV at the same time.

**WHEREFORE, THE PREMISES CONSIDERED,** the Land Mobile Communications Commission urges the Commission to proceed in a manner consistent with the views expressed herein; and to move forward expeditiously with a decision in this and the UHF-TV Sharing proceeding.

Respectfully submitted,

THE LAND MOBILE COMMUNICATIONS  
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Dated: November 18, 1987

TESTIMONY OF

STEVEN BONICA

VICE PRESIDENT OF ENGINEERING

NATIONAL BROADCASTING COMPANY, INC.

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS

AND FINANCE OF THE

COMMITTEE ON ENERGY & COMMERCE

UNITED STATES HOUSE OF REPRESENTATIVES

HEARING ON HIGH DEFINITION TELEVISION

OCTOBER 8, 1987

## SUMMARY SHEET

STEVE BONICA, VICE PRESIDENT OF ENGINEERING

NATIONAL BROADCASTING COMPANY

ACTV

### ADVANCED COMPATIBLE TELEVISION

- DEVELOPED BY DAVID SARNOFF RESEARCH CENTER IN COLLABORATION WITH NBC AND GE/RCA--CONSUMER ELECTRONICS
- A SINGLE-CHANNEL NTSC-COMPATIBLE WIDESCREEN ENHANCED DEFINITION TELEVISION SYSTEM
- ACTV RECEIVERS WILL DISPLAY SHARPER WIDESCREEN PICTURE, FREE FROM MANY ARTIFACTS OF THE PRESENT NTSC SYSTEM.
- THE ENHANCED WIDESCREEN PICTURE IS DELIVERED WITHIN THE EXISTING 6 MHZ BROADCAST CHANNEL.
- ALL EXISTING TELEVISION SETS WILL DISPLAY A STANDARD 4:3 NTSC PICTURE.
- MAKES GOOD TECHNICAL AND ECONOMIC SENSE FOR BROADCASTERS, CABLE OPERATORS, EQUIPMENT MANUFACTURERS, AND CONSUMERS:
  - ALLOWS GRADUAL INTRODUCTION, NO LOSS OF EXISTING SERVICES
  - ALLOWS BROADCASTERS TO DECIDE INDIVIDUALLY WHEN THEY ARE READY FOR CHANGEOVER TO THE NEW DUAL PURPOSE SIGNAL
  - ALLOWS CONSUMERS TO CONTINUE USE OF THEIR OLD TV SETS UNTIL THEY DECIDE TO PURCHASE NEW WIDESCREEN EDTV SETS
- IF ADDITIONAL SPECTRUM IS NECESSARY IN THE FUTURE TO ACCOMMODATE FURTHER TECHNICAL INNOVATIONS, THE SYSTEM PROVIDES BASIS FOR COMPATIBILITY ACCOMMODATING THESE ADVANCES.

I AM STEVEN BONICA, VICE PRESIDENT OF ENGINEERING FOR THE NATIONAL BROADCASTING COMPANY. NBC APPRECIATES THIS OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE TO DISCUSS A MAJOR TECHNOLOGICAL DEVELOPMENT THAT COULD AFFECT THE FUTURE OF BROADCAST TELEVISION--ADVANCED COMPATIBLE TELEVISION, OR ACTV. IT HAS THE POTENTIAL TO ASSURE AMERICAN TELEVISION VIEWERS A WIDER AND SHARPER PICTURE THAN HAS EVER BEEN POSSIBLE.

THERE ARE FOUR AREAS I WOULD LIKE TO COVER TODAY:

- \*\* A BRIEF DESCRIPTION OF ACTV,
- \*\* HOW ACTV COMPLIMENTS TELEVISION SERVICES WITHIN EXISTING TECHNICAL STANDARDS,
- \*\* THE BENEFITS OF ACTV TO TELEVISION CONSUMERS,
- \*\* FUTURE POLICY CONSIDERATIONS.

ACTV IS A SINGLE-CHANNEL, COMPATIBLE, WIDE-SCREEN, EXTENDED DEFINITION TELEVISION TRANSMISSION SYSTEM. IT IS THE RESULT OF MORE THAN A DECADE OF RESEARCH AND

DEVELOPMENT AT THE DAVID SARNOFF RESEARCH CENTER--FORMERLY THE RCA LABS--UNDER THE AUSPICES OF NBC AND GE/RCA CONSUMER ELECTRONICS.

TODAY, WITH THE ACTV SYSTEM, WE BELIEVE WE HAVE THE ANSWER TO DELIVERING A TELEVISION PICTURE WITH SIGNIFICANT IMPROVEMENTS. THE TASK OF ACCOMMODATING WIDE-SCREEN EXTENDED DEFINITION IN A STANDARD 6MHZ CHANNEL, WHILE RETAINING BACKWARD COMPATIBILITY, HAS BEEN A FORMIDABLE CHALLENGE. MANY IN THE INDUSTRY THOUGHT THAT THIS WAS NOT A REALIZABLE GOAL. IN FACT, SOME HAD ABANDONED THIS OBJECTIVE PREMATURELY. HOWEVER, THE WORK OF NBC AND THE DAVID SARNOFF RESEARCH CENTER HAS PROGRESSED TO A POINT WHERE WE CAN PREDICT A HIGH PROBABILITY OF SUCCESS.

THE ACTV SYSTEM WILL PROVIDE MORE LINES OF RESOLUTION AND AN IMAGE 25% WIDER THAN TODAY'S CONVENTIONAL TELEVISION PICTURES. PART OF THE PICTURE ENHANCEMENT RESULTS FROM THE DOUBLING OF THE PRESENT 525 LINES PER FRAME TO 1050 LINES. THE ATTRIBUTES OF THE ACTV 1050 LINES PER FRAME SYSTEM INCLUDE: INCREASED VERTICAL AND HORIZONTAL RESOLUTION, FAR MORE CLARITY THAN PRESENT PICTURES, COMPATIBILITY WITH THE EXISTING CHANNEL ALLOCATIONS,

AND COMPATIBILITY WITH STANDARD TV RECEIVERS.

UNLIKE OTHER PROPOSED HIGH DEFINITION SYSTEMS THAT RELY ON VCRS OR SATELLITE-TO-HOME DELIVERY, LOCAL BROADCASTERS WILL BE A CONDUIT THROUGH WHICH THE ACTV SYSTEM IS TRANSMITTED. FREE, OVER-THE-AIR TELEVISION STATIONS WILL BE ABLE TO TRANSMIT LOCAL AND NETWORK PROGRAMS WITH HIGHER DEFINITION RESOLUTION WITHOUT MAJOR ALTERATIONS TO THEIR EXISTING ENGINEERING SCHEMES. A STANDARD BROADCAST STATION WILL BE ABLE TO IMPLEMENT THE ACTV SYSTEM GRADUALLY, AT A LOWER COST THAN OTHER SYSTEMS, AND WITH NO DISRUPTION OF SERVICE TO ITS VIEWERS. STATION OPERATORS WILL BE ABLE TO UPGRADE THEIR FACILITIES AND SERVICE COMMENSURATE WITH VIEWER DEMAND. THIS WILL ALLOW STATIONS TO GAUGE THE PACE OF THEIR FINANCIAL INVESTMENT. FURTHERMORE, STATIONS WILL BE ABLE TO DELIVER ENHANCED TELEVISION IN AN NTSC-COMPATIBLE SINGLE CHANNEL WITHOUT REQUIRING ADDITIONAL SPECTRUM.

CABLE OPERATORS CAN EXPERIENCE THE SAME ADVANTAGES OF THE ACTV SYSTEM AS OVER-THE-AIR BROADCASTERS. ACTV WILL OFFER CABLE SYSTEMS THE ABILITY TO RETRANSMIT

BROADCASTERS' ENHANCED SIGNALS AND TO DELIVER THE ENHANCED DEFINITION SERVICES OF CABLE PROGRAMS WITHIN A SINGLE CABLE CHANNEL FOR EACH PROGRAM SERVICE. THUS, THIS SINGLE-CHANNEL PROPOSAL WILL BE PARTICULARLY BENEFICIAL TO CABLE SYSTEMS WITH LIMITED CHANNEL CAPACITY, THEREBY AVOIDING THE POSSIBILITY THAT CERTAIN SERVICES ON THE CABLE SYSTEM WOULD HAVE TO BE REMOVED IN ORDER TO TRANSMIT A BETTER PICTURE. WE BELIEVE THE FINANCIAL INVESTMENT REQUIRED BY CABLE OPERATORS TO BRING ACTV ENHANCED PICTURES TO THEIR SUBSCRIBERS WILL BE LESS THAN OTHER PROPOSED EXTENDED DEFINITION SYSTEMS.

WHAT DOES ACTV MEAN TO THE MORE THAN 87 MILLION AMERICAN TELEVISION HOMES? IT WILL ALLOW OVER-THE-AIR TELEVISION TO CONTINUE TO BE A SOURCE FOR LOCAL AND NETWORK ENTERTAINMENT AND INFORMATIONAL PROGRAMS. AND IT WILL ALLOW CABLE OPERATORS TO DELIVER THEIR SERVICES THROUGH THE SAME ENHANCED SYSTEM. THE 140 MILLION TELEVISION SETS NOW IN USE WILL NOT BE OBSOLETE. A VIEWER WHO WISHES TO BUY A NEW ACTV RECEIVER CAPABLE OF DECODING THE SIGNAL INTO A WIDESCREEN, ENHANCED DEFINITION IMAGE MAY DO SO. THESE VIEWERS WILL RECEIVE A WIDER AND SHARPER PICTURE ON EXISTING CHANNELS THAN THEY HAVE EVER BEEN ABLE TO RECEIVE AT HOME.

OTHERS WHO WISH TO KEEP THEIR OLD SETS WILL BE ABLE TO WATCH THE SAME PROGRAMS ON THE REGULAR CHANNELS, WITH THE ORDINARY SOUND AND PICTURE QUALITY AND WITH NO LOSS OF SERVICE. THE ACTV SYSTEM ALLOWS THE CONSUMER TO MAKE THE CHOICE AS TO WHEN IT IS MOST DESIRABLE TO BUY A NEW SET.

IT IS CRITICAL FOR ALL IN OUR INDUSTRY TO UNDERSTAND THAT NO SYSTEM PROPONENT HAS YET OFFERED A TRUE HIGH DEFINITION SYSTEM FOR TERRESTRIAL BROADCAST, CABLE, SATELLITE OR VCR DISTRIBUTION. NBC BELIEVES ITS WIDE-SCREEN EXTENDED DEFINITION SYSTEM IS OF EQUIVALENT QUALITY TO ANY OTHER SYSTEM THAT HAS THUS FAR BEEN PROPOSED. WE ENVISION TRUE HIGH DEFINITION TELEVISION SERVICE BECOMING A REALITY AT SOME POINT IN THE FUTURE, AND WE BELIEVE THAT ACTV IS THE FOUNDATION THAT WILL BEGIN THE EVOLUTIONARY PROCESS TO REACH THAT GOAL.

CONSEQUENTLY, NBC CONTINUES TO STRONGLY SUPPORT INDUSTRY EFFORTS TO ENSURE THAT SUFFICIENT SPECTRUM IS PROVIDED FOR TERRESTRIAL BROADCASTERS SO THAT TELEVISION STATIONS ARE IN A POSITION TO PROVIDE FUTURE TECHNOLOGICAL BENEFITS TO THE AMERICAN CONSUMER. THUS, IT IS IMPORTANT THAT WE NOT IGNORE SPECTRUM ISSUES. THEY HAVE TO BE

FACED TODAY IN ORDER TO ENSURE THAT WE CAN MEET FUTURE NEEDS. WE BELIEVE THE FEDERAL COMMUNICATIONS COMMISSION'S CAREFUL EXAMINATION OF THE SPECTRUM ISSUES ARE A CRITICAL INGREDIENT TO ASSURING THAT AS TECHNOLOGY EVOLVES, TERRESTRIAL BROADCASTING--AND THE PUBLIC INTEREST BENEFITS IT PROVIDES--CAN EVOLVE WITH IT. I MUST STRESS THAT ACTV HAS NOT YET BEEN FIELD TESTED. OUR WORK ON THE SYSTEM WILL CONTINUE, BUT WE ARE CLOSE ENOUGH NOW TO KNOW THAT WE HAVE A VERY VIABLE HIGH RESOLUTION TECHNOLOGY WHICH IS A REAL ALTERNATIVE TO OTHER SYSTEMS REQUIRING GREATER TRANSMISSION BANDWIDTH.

TO DATE, NONE OF THE OTHER ADVANCED TELEVISION SYSTEMS THAT HAVE BEEN DEMONSTRATED--IN PARTICULAR THE MUSE SYSTEM DEMONSTRATED ON CAPITOL HILL EARLIER THIS YEAR--ACCOMPLISH THE GOAL OF DELIVERING ENHANCED TELEVISION IN AN NTSC-COMPATIBLE SINGLE CHANNEL. MOREOVER, WE BELIEVE ACTV PROVIDES A PICTURE THAT IS COMPARABLE TO ANY OTHER TRANSMISSION SYSTEM SHOWN SO FAR. THIS BELIEF WAS CONFIRMED WHEN ACTV WAS DEMONSTRATED AT A HDTV SYMPOSIUM THIS WEEK IN OTTAWA.